

Management of Small Docks and Piers

Visual Impacts

Forward—

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Introduction—

From a manager's perspective, the publicly voiced concerns related to small docks and piers are often not strongly related to environmental issues. They may be more related to visual impacts and aesthetic concerns, a sense of over-development of the shore—"shoreline sprawl"—or simply change. Individuals often hold personal aesthetic values related to small docks in general or an individual structure in particular. However, techniques have evolved that appear to:

1. Provide reproducible, predictive assessments of the visual impacts and aesthetic values of an area and
2. Show how those might change with development based on public rather than individual values.

Assessments of this type may be used to develop regulatory or non-regulatory methods for the management of small docks based on state or community standards.

Visual impact assessments are increasingly used in the regulatory review of proposed development—although this process is still in its infancy as regards small docks and piers. Some political jurisdictions have established visual impact or aesthetic standards to address docks and others are in the process of investigating how to go about such an effort.

This module is intended to provide an overview of:

1. The legal bases for developing visual impact or aesthetic standards,
2. Visual impact analysis techniques,
3. Capabilities at the local and state level to develop and implement visual impact or aesthetic standards,
4. Examples of existing management programs that incorporate visual impacts or aesthetics, and

5. Case studies of the implementation or judicial review of management decisions based on visual impacts.

The following materials are intended to provide an introduction and brief overview of the “reasonableness” of visual impact assessment and techniques for managing small docks using aesthetic impacts. For greater detail, please refer to the references and background readings provided in the Bibliography.

Legal Bases for Visual Impact Management—

Legislation relating to coastal management often incorporates some mention of scenic values, aesthetics or community character, either in the body of the statute or in the legislative findings related to the statute. The following are examples of the types of language found in coastal management laws, statutes, regulations, or ordinances. In developing visual impact management techniques, each state or municipality should review its regulatory documents for such references.

Federal Coastal Zone Management Act—

Section 303 notes that one of the purposes of the Act is “to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development...” [Emphasis added]. In many instances, states have incorporated this or similar language into their coastal management program statutes and regulations.

Massachusetts Public Waterfront Act (MGL Chapter 91) Regulations (310 CMR 9.01 (2)—

This section of the regulations states that its purpose “includes protecting the public trust rights, ensure only water-dependent uses or otherwise serve a proper public purpose, protect public health, safety, and general welfare, support efforts to revitalize unproductive property in urban waterfronts and foster the right of the people to The natural, scenic, historic and esthetic qualities under Article XCVII of the Massachusetts Constitution.” [Emphasis added]

New Jersey Coastal Area Facilities Review Act (N.J.S.A. 13:19)—

“The Legislature finds and declares that New Jersey's bays, harbors, sounds, wetlands, inlets, the tidal portions of fresh, saline or partially saline streams ... channels, estuaries, barrier beaches, near shore waters and intertidal areas together constitute an exceptional, unique, irreplaceable and delicately balanced ... natural environmental resource, ... that certain portions of the coastal area are now suffering serious adverse environmental effects resulting from existing development activity impacts that would preclude or tend to preclude those multiple uses which support diversity and are in the best long-term, social, economic, aesthetic and recreational interests of all people of the State; and that, therefore, it is in the interest of the people of the State that all of the coastal area should be dedicated to those kinds of land uses which promote the public health, safety and welfare, protect public and private property, and are reasonably consistent and compatible with the natural laws governing the ... environment of the coastal area.” [Emphasis added.]

Maine Natural Resource Protection Act (38 M.R.S.A. §480-A–Z)—

Legislative Findings: “The Legislature finds and declares that the State's rivers and streams, great ponds, ...freshwater wetlands, ... coastal wetlands and coastal sand dunes systems are resources of state significance. These resources have great scenic beauty and unique characteristics, unsurpassed recreational, cultural, historical and environmental value of present and future benefit to the citizens of the State and that uses are causing the rapid degradation and, in some cases, the destruction of these critical resources, producing significant adverse economic and environmental impacts and threatening the health, safety and general welfare of the citizens of the State.”

Standard 480-D of the Act states that “a permit may not be granted for an activity in, on, over, or adjacent to protected natural resource when the activity will unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses.” [Emphasis added.]

South Carolina Coastal Tidelands and Wetlands Act (Title 48, Chapter 39)—

Legislative declaration of findings: “The General Assembly finds that ... [I]mportant ecological, cultural, natural, geological and scenic characteristics, industrial, economic and historical values in the coastal zone are being irretrievably damaged or lost by ill-planned development that threatens to destroy these values.” [Emphasis added.]

Washington State Shoreline Management Act of 1971 (REC 90.58)—

The Legislative Findings note “It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses. This policy is designed to insure the development of these shorelines in a manner which, while allowing for limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. ... In the implementation of this policy the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally.” [Emphasis added.]

Nantucket (Massachusetts) municipal wetlands ordinance—

“The purpose of this chapter is to protect the wetlands of the Town of Nantucket by controlling activities deemed to have a significant or cumulative effect upon wetland values, including but not limited to the following: public or private water supply, groundwater, flood control, erosion control, storm damage prevention, water pollution, fisheries, shellfish, wildlife, rare species, including rare, threatened or endangered plant species and animals and habitats, recreation and wetland scenic views ... This chapter is intended to use the Home Rule Authority of this municipality to protect additional resource areas for additional values, with additional standards and procedures in addition to those of the [state] Wetlands Protection Act, MGL c. 131, § 40, and regulations thereunder, 310 CMR 10.00.” [Emphasis added.]

Middleton (Wisconsin) municipal wetlands zoning ordinance (Section 29.00)—

The Findings of Fact and Statement of Purpose of this ordinance find that “Uncontrolled use of the shoreland-wetlands ... would adversely affect the public health, safety, convenience and general welfare and impair the tax base. The Legislature of Wisconsin has delegated responsibility to all municipalities to: ...

(f) Preserve shore cover and natural beauty...” [Emphasis added.]

These statutes, ordinances, or regulations containing language describing scenic views, aesthetics, community character, or visual impacts can provide the legal basis for the development and implementation of a management plan for small docks and piers.

At the municipal level, zoning ordinances have always provided the opportunity to regulate design, size, or appearance of structures to ensure the protection of “community character”. Architectural review of proposed structures for building height and appearance, zoning based on the historic nature of villages, scenic overlay districts, and billboard laws are all examples of how municipalities regulate based on aesthetics and visual impacts. As will be seen in the Lloyd Harbor (NY) Case Study below (Page 19), this process can be applied to private docks as well as to houses, offices, or factories.

Two types of authority can be used to manage docks and piers:

- The police powers to protect public health, safety and general welfare and
- The rights of ownership.

The police powers provide the state or municipality authority to regulate activities for the public good in the protection of health, safety, welfare, and morals. Rights to regulate such activities may be delegated to municipalities. There are, however, two principal methods of allowing municipalities these powers:

1. In some states “Dillon’s Rule” applies prohibiting municipalities from exercising any powers except those expressly granted by the legislature, or which are incident to powers expressly granted, or
2. In “Home Rule” states municipalities may establish reasonable standards to protect public welfare so long as they are not expressly prohibited at the state or federal level and are not more lenient than state or federal standards.

For a thorough review of the legal underpinnings for statutes, ordinances and regulatory actions see Smardon and Karp (1992) in the Bibliography.

The rights of ownership are based on state or local proprietary interest in property and associated property rights and are not constrained by the need to link decisions to public health, welfare and safety. In the case of tidal waters, large ponds and some river systems, the property owner (typically the state or municipality) may make management decisions that go well beyond the limits of the police powers.

For example, in most coastal waters and many freshwater bodies there is a state or municipal obligation to protect specific rights under the public trust doctrine. These generally include fishing or hunting in, navigation within, or traversing through tidelands. Private activities may be regulated to prevent impairment of these public rights.

While states, and often municipalities, have the legal authority to regulate docks and piers, their authority can be, and is, sometimes challenged. Typical challenges to management standards and procedures include claims that:

- The decisions of the reviewing authority are beyond the scope allowable by the enabling act or supporting regulations;
- A decision has violated a law, either in the substance of the decision, the procedure used to reach the decision, or a violation of the public trust obligations of the political entity;

- The process used to establish the standards and procedures, or the decision rendered under those standards is arbitrary and capricious;
- No substantial evidence has been produced to support the establishment of the standards or for the specific decision;
- The regulating authority has abused its discretion in applying the standards to a particular project; and/or
- The standards, or specific decision, result in a violation of the Fifth Amendment of the U.S. Constitution that prohibits taking of land without just compensation. This can include a partial taking or a temporary taking. (McGregor, 2004).

Consequently, management plans or regulatory programs must be carefully crafted and implemented to reflect community values and withstand court challenges.

Visual Impact Analysis Techniques—

Appropriate standards and reproducible evaluation methods to assess potential impacts are critical when basing dock and pier permitting decisions on visual impacts or aesthetics. Planners have developed techniques that provide an objective evaluation and standards—thereby removing much of the subjectivity from the decision-making process and making the results more predictable.

The Landscape Institute (Lincoln, UK) and Institute of Environmental Assessment (London, UK) have cooperatively prepared a book entitled *Guidelines for Landscape and Visual Impact Assessment* (Wilson, 2002) that provides tested methods and techniques for visual impact assessments. Overall, landscape impacts are defined as changes in “the character and quality of the landscape as a result of development.” Consequently, a **landscape impact assessment** evaluates:

- Direct impacts on specific landscape elements,
- More subtle, or indirect, effects on the overall pattern of elements that shapes landscape character, and
- Impacts on generally accepted special interests or values such as designated landscapes or scenic views, conservation areas, public lands, and historic and cultural sites.

Visual impacts are described as a sub-set of landscapes. They relate solely to changes in views of the landscape and the resultant effects of those changes on people. **Visual impact assessments** therefore address;

- The direct impacts of the proposed changes landscape views due to intrusion or obstruction,
- The reaction of viewers who may be affected, and
- The overall impact on the view (which may range from degradation to enhancement).

The steps in the process of landscape and visual impact assessment are very similar to those involved in the environmental assessment process as a whole.

Richard Smardon *et al.* (1986, and Smardon 1988) have developed a system of visual analysis based on the elements of

- Landscape compatibility (whether the proposed structure “fits” into its surroundings),

- Scale contrast (is the proposed structure significantly larger than elements in its surroundings), and
- Spatial dominance (whether the proposed structure will dominate the landscape).

For the analysis, respondents are provided with a series of images showing the existing landscape and how it would be affected by the proposed change as seen from a variety of perspectives. The visual image of the constructed project within the landscape may be developed from computer-enhanced images or architectural renderings (discussed in further detail below). Experience with visual impact assessments show that, when shown images of shorelines in various stages or types of development, the majority of people select the same image as being aesthetically preferable—suggesting that results from such a process can be considered reliable and repeatable.

In general, surveys have shown that aesthetic preferences are for historic or generic coastal development, water-related development, open/distance water views, enhanced water access, and diverse and well-maintained vegetation. People disliked development in undeveloped coastal landscapes and tourist-like commercial development (Banerjee and Gollub, 1976; Knutson *et al.*, 1993; Shannon *et al.*, 1990; Smardon, 1987; Steinitz, 1990).

Assessments in coastal areas (Smardon, in Kelty and Bliven, 2003) indicate that the public:

- Is generally not accepting of development in an undeveloped coastal landscape,
- Likes coastal development that is “generic” or historical (*i.e.*, “fits within the coastal waterfront context”),
- Likes open water views and views of the horizon over the water,
- Does not like “tourist-like” development, and
- Likes diverse but well maintained vegetation.

There are, however, clear differences in preferences between residents and visitors and between younger and older viewers. Younger viewers and visitors tend to be more responsive to development or change than residents and older viewers.

When asked about coastal structure preferences, the majority of respondents:

- Indicated that their preference would depend on whether or not the landscape is developed,
- Were more positive if structures are perceived as marine- or water-related,
- Were more positive if structures are perceived as enhancing water access, and
- Were very positive if the structures are related to historic or heritage values. (Smardon, in Kelty and Bliven, 2003)

Preferences about structures also depend on the perspective, *i.e.*, whether seen from the shore looking seaward, from the water looking landward, or viewed along the shoreline. Views from the shore can be an open vista, have an edge or visual boundary to the panorama, or be filtered through structures. Generally, people dislike filtered views (Smardon, in Kelty and Bliven, 2003)



Figure 1. Examples of a view from shore having an edge (left photo) and a filtered view (right). Photos from Smardon (in Kelty and Bliven, 2003)

Preparing comparisons for Visual Analysis—

As mentioned earlier, the typical means of preparing a visual analysis is to show respondents side-by-side comparisons of the existing landscape and a simulated version of what the landscape would look like if developed. This sort of analysis can be effectively used either for case-by-case regulatory review or for area-wide planning programs. While new techniques have emerged to simulate the proposed structures, the comparative process remains as it has been for decades. For large or complicated projects, see Smardon *et al.* (1988); good background sources include Sheppard (1986, 1989) listed in the Bibliography.

Renderings of proposed structures or landscapes are common tools of architects. In the past these were drawn by hand, but photo-imaging software is making increasingly sophisticated mock-ups more accessible. Products range from static images of the proposed change to complicated images that allow the viewer to see the virtual structure from a continuous series of perspectives as if walking or “flying” through the landscape.

The critical elements that ensure a fair and valid comparison include:

- Clearly documenting the angle of view for the lens used,
- Noting the distance between the viewpoint and the object,
- Providing the aspect or angle of the viewer,
- Providing the location of the viewpoint from which the picture was taken, and
- Providing a sufficient number of views (generally six to seven) to ensure that the structure is seen in its full context. (Smardon, in Kelty and Bliven, 2003)

A simple technique for visualization is to “draw” in the structure or structures on an existing photograph using a photo-manipulation program such as Adobe Photoshop®. The renderings below were prepared by the Massachusetts Coastal Zone Management Office using this technique as part of a preliminary planning exercise in the Town of Fairhaven, MA. In this instance, the purpose was to provide a sense of what the landscape would look like at “full build-out”, *i.e.*, each property facing the embayment had a dock.



Figure 2. A view of current conditions along the shore of Fairhaven, MA. Graphic courtesy of the Massachusetts Coastal Zone Management Office, used with permission



Figure 3. Simulated photograph of how conditions along the shore of Fairhaven, MA could look at full build-out of docks. Graphic courtesy of the Massachusetts Coastal Zone Management Office, used with permission.

The comparison between these two photographs (Figures 2 and 3) allowed municipal officials to understand the potential visual impacts of a variety of types and numbers of structures. This information could then be used to aid a planning process for the embayment which, among other factors, would address potential dock growth.

To be most accurate and effective, such renderings should be developed showing the shoreline from various perspectives; *e.g.*, looking from the water looking towards the shore, from various

points along the shore looking seaward, along the shoreline from a distance (as above), and near one of the docks looking along the shore, etc.

More sophisticated computer simulation techniques are available and are improving rapidly. These can be used to “build” a 3-dimensional model of the proposed structure that can be linked with a series of photographs registered to specific viewing locations. In this way, a range of viewing perspectives can be established. The simulations below (Figures 4a and 4b) were



Figure 4a. (Upper left) A simulated view of a proposed dock on the shore of Somes Sound, ME at high tide.

Figure 4b. (Lower right) A simulated view of a proposed dock on the shore of Somes sound, ME at low tide. Note how the stage of the tide renders the dock more or less visible. Graphics courtesy of Pepperchrome. Used with permission.

produced by John Gutwin of Pepperchrome located in Portland, ME using the programs PhotoModeler® and LightWave®. [Note: mention of a specific company or product in this document does not constitute an endorsement. Rather, they are to provide examples of the types of products that are available.] This type of business is not unique (“there is probably one in almost every state—look in the Yellow Pages for Visual Impact Assessment, Visual Impact Simulation or Architectural Simulation” (John Gutwin, 2004, personal communication)).

While this is not a trivial process, it is common in landscape architecture. The photo-renderings prepared for a visual impact assessment in Maine cost on the order of \$5,000 for views of a single dock. To put in additional docks, particularly “generic” ones or replicas of the original dock, would increase the cost but probably not double it. The PhotoModeler® web site at www.photomodeler.com provides a further understanding of this process and its capabilities.

It is important that the person or agency that would like to have this sort of visual simulation produced have a solid understanding of the basics of the simulation process prior to engaging someone to prepare these types of images. There are many variables, well beyond the scope of this paper, that should be considered to make the results meaningful and appropriate for regulatory evaluation. A good discussion of these variables may be found in Sheppard (1986, 1989) in the Bibliography.

Visual Impact Management Implementation—

Under the police power provisions (protecting public health, welfare and safety), states and municipalities have a number of options to implement visual impact or aesthetic standards. The rights of ownership or public trust offer additional capabilities. In either instance, standards must be established for a particular geographic area or resource type—a defined special management area. These areas may be large—the State of Maine has established standards that apply over most of its extensive coastline (see below)—or limited to a particular embayment or section thereof within a single municipality.

States or municipalities may define special management areas under a number of options including:

- Zoning overlay districts
- Critical resource areas
- Wild and Scenic River designations, or
- Harbor management planning areas.

Zoning Overlay Districts

Zoning regulations have been used in coastal and inland areas throughout the country to separate different and potentially conflicting activities within a community. Within any given zone, design and construction standards are established and projects meeting those standards are automatically allowable. A variance process is generally established for proposals that do not meet the standards but may provide some communal benefit. When the zoning is established, there may be “prior, non-conforming structures” within the zoning area and typically these are allowed to continue in use by the property owner but are phased out over time.

Many municipalities have adopted some form of zoning ordinances that prohibit or limit certain uses or types of structures from specific sections of the community. A relatively new concept (and one that has had limited testing through the courts) is the extension of municipal zoning into waterbodies that lie within the jurisdiction of the municipality—often referred to as “watersheet zoning.” The zoning process can be applied to docks in a manner similar to other land uses—provided there is a demonstration that the standards bear a rational relationship to a legitimate governmental objective. (For an example, see the Lloyd Harbor (NY) case study below.)

Within such a Zoning Overlay District, communities may establish standards addressing visual impacts, including the size, length, or height of docks; the depth of water at its terminus; the construction materials to be used, and/or the overall dock design. In some instances a complete prohibition of docks may be warranted.

Overlay Districts are adopted by a municipality in the same way as any other zoning change. However, zoning standards for docks must take into account the riparian rights of property owners along the shore. In most cases, riparian rights give waterfront property owners access to the water abutting their property—and this often is interpreted as allowing some form of structure or dock. However, this does not mean that reasonable standards for dock construction cannot be established—or that docks cannot be prohibited altogether, so long as access to the water is not prohibited. There is legal precedent for limiting access to a dinghy stored on, and launched from, the shore (See Lloyd Harbor Case Study, Page 19).

Harbor Management Areas

In most harbor management plans, the central issue is resolving conflicting human uses within a specific geographic area. These uses could be resource-based such as shellfishing; recreational-based such as swimming, boating, water-skiing; commercial-based such as wharfs and associated uses; or residential-based such as private docks.

As part of a harbor planning exercise on Bainbridge Island, WA, planners assessed the potential for visual impacts from dock construction (Best, 2002). They created a GIS model showing the existing docks and the potential for a full build-out of docks. There are three existing small piers in this generally shallow embayment, but there is the potential for more than 50. Using these two scenarios, the planners then calculated the narrowing of views (*i.e.*, the change in views unobstructed by the presence of docks) from “select public vistas” such as parks and scenic roadways along the harbor as well as views of the land from the water side. They did not assess the visual impacts on views from private properties. Analysis showed that the view corridors from the public land sites would be narrowed between 27% and 58% for projects that had already been proposed and up to 78% at maximum build-out. The planners acknowledged the likelihood of additional impacts from light and noise but did not quantify these. However, they did perform additional assessments for the impacts to navigation and natural resources from a full dock build-out. This methodology offers interesting options for visual impact analysis during a harbor planning exercise. As a result of the planning effort, future dock development in the harbor will be limited to two or three communal structures.

Wild and Scenic River Designations—

Wild and Scenic River designation provides another framework for visual impact management. Rivers and their immediate environments selected for their,

“outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” (The Federal Wild and Scenic Rivers Act; P.L. 90-542 as amended; 16 USC. 1271–1287)

Rivers can be designated either by Congress or state legislatures. Many states have developed parallel state legislation to designate and manage wild and scenic rivers (e.g., New Jersey’s Wild and Scenic Rivers Act of 1977; N.J.S.A. 13:8–45 *et seq.*). Within such designated areas, management plans are developed that may be implemented through either state statutes or municipal ordinances. These plans generally include means for maintaining existing scenic vistas. Therefore, Wild and Scenic designation provides an opportunity for assessing the aesthetic impacts of docks and piers and creates a framework for developing management strategies to address dock growth.

Critical Resource Areas—

Many states and municipalities have the authority to define certain areas as critical to the protection of coastal resources. These may be referred to as aquatic preserves, Areas of Critical Environmental Concern, Areas for Preservation and Restoration, or significant wildlife or marine resource habitat, etc. Despite their varied names, critical resource areas could also provide a framework for a dock management plan. Scenic resources are often a factor in their designation, leading to the potential for construction standards to minimize or avoid visual impacts from shoreline structures, including docks.

Pleasant Bay, an estuary bordering on four towns on Cape Cod (MA), was designated as an Area of Critical Environmental Concern by the Commonwealth of Massachusetts in 1987. This designation precluded state issuance of permits for dock construction until a state-approved Resource Management Plan was in place. A resource-based dock and pier management plan was submitted for approval in 2000 (Macfarlane *et al.*, 2000). During the development of the resource management plan for the Bay, an inventory was taken of existing private piers and the potential for further dock construction. The planning group developed a matrix designed to predict the impacts from individual docks and piers—as well as cumulative impacts—and applied this summary to 26 geographic subsections within the Bay. Each subsection then received a point rating based on that area’s susceptibility to impacts by noting the presence or absence of shellfish, fringing marsh, eelgrass, and existing docks and moorings, a navigational channel; depth of water, and whether the area was used for recreation. As a result the bordering communities established a moratorium on dock construction in some areas and the establishment of standards for design and construction in others.

These moratoria and standards are implemented in a similar manner by each of the four towns through parallel local ordinances. Macfarlane *et al.* (2002) note that, “By eliminating the lot-by-lot procedures, we have also eliminated a more subjective approach to the permitting procedure.” While the evaluation of the subsection of the Bay’s susceptibility to impacts from docks and piers was based primarily on the Bay’s ecosystem (although the state regulatory language regarding the resource management plans include “significant scenic sites” as one designation criterion), the methodology is instructive and could easily be modified for visual impacts.

Another example of a critical area management plan may be seen in Lake Tahoe. The Lake Tahoe Regional Planning Agency has established regulatory standards for construction visible

from the lake (www.trpa.org/documents/docdwnlds/ordinances/code53.pdf). The purpose of the standards is to “regulate structures in the foreshore and nearshore to avoid interference with attainment of scenic thresholds.” Under this program, the Agency has established “Shoreline Tolerance Districts” based on proximity to the water and geological and topographical conditions. For proposed projects along the waterfront, an applicant must provide an inventory of the current scenic conditions and meet standards related to the color of the proposed structure, the type of roofing materials and construction, the type of fencing, etc. Regarding new piers, they must meet standards related to distance from property lines, proximity to tributaries and important fish habitats, length (based on depth of water or a defined pierhead line established in the Lake); width; height; and design. Regulation of new piers is designed to prevent:

- Degradation of fish habitat,
- Creation of navigation hazards,
- Interference with littoral drift,
- Interference with the attainment of scenic thresholds [emphasis added], and
- Other relevant concerns.

Regulations pertaining to this program may be found at the Lake Tahoe Regional Planning Agency web site at <www.trpa.org/default.aspx?tabindex=2&tabid=172>. Specifically, Chapter 30 of the regulations describes the Scenic Quality Review Program, Chapter 53 describes the Shorezone Tolerance Districts and Design Standards for structures, and Chapter 54 contains standards specific to new piers.

Existing Programs to Manage Visual Impacts from Small Docks—

Several state or local management programs have incorporated—directly or otherwise—some type of visual impact, aesthetic, or scenic standard.

Mississippi, Florida, and Georgia, for example, have established limits on the height and vertical area of structures on the end of docks. While these standards help control visual impacts, they are rooted in protection of lines of sight for navigation. Massachusetts prohibits structures on the end of docks that are not “water-dependent” (as opposed to “water-enhanced”). Again, the intent was to protect navigation and manage private use of public waterways, but the prohibition has the unintended effect of lessening visual impacts. In the Lloyd Harbor, NY case study (See page 19), the Village established length limits for docks to protect navigation but also to “retain community character.”

Perhaps the clearest management of docks for visual impacts is found in Maine’s Natural Resources Protection Act. Title 38 §§ 480-A–Z, Standard 1 specifically requires an applicant to demonstrate that a proposed activity will not “unreasonably interfere with existing scenic and aesthetic uses.” The Visual Impact Regulations (Chapter 315) specify State regulatory concerns; define visual impacts; establish a procedure for evaluating visual impacts; establish when a visual assessment may be necessary; explain the components of a visual assessment; and describe avoidance, mitigation and offset measures that may eliminate or reduce adverse impacts to existing scenic and aesthetic uses.

Under the Act, each proposed structure must be evaluated for three major criteria and sub-criteria, as follows:

1. Landscape Compatibility (Severe, Moderate, Minimal, None)

- § Color (whether the proposed structure is a significantly different color, hue, value, or chroma) from its surrounding landscape,
- § Form (whether the two- or three-dimensional shape of the proposed structure is incompatible with landscape surroundings),
- § Line (whether the proposed structure introduces incompatible edges, bands, or silhouette lines), and
- § Texture (whether the proposed structure will produce an incompatible textural grain, density, regularity, or pattern).

2. Scale Contrast

- Severe: Major scale introduction/intrusion
- Moderate: One of several major scales or major objects in a confined setting
- Minimal: Significant object or scale
- None: Small object or scale.

3. Spatial Dominance (Dominate, Co-dominate, Sub-ordinate, Insignificant)

- An evaluation of whether the proposed structure dominates or is prominent in whole landscape composition; is prominently situated within the landscape; or dominates landform, water or sky backdrop.

In many instances, the review process requires the applicant to provide a graphic simulation of how the proposed structure fits into the landscape setting. Examples of graphic simulations for docks reviewed under the Maine criteria are seen in Figures 4a. and 4b. on page 9 of this document.

The evaluation produces a score for “Total Visual Impact Severity.” This score is entered into a matrix (See Appendix A for a copy of the matrix) with the Severity along one axis and the Scenic Significance along the other in order to determine which of the following categories the proposed project falls into:

- Unacceptable,
- Acceptable with mitigation of various levels, or
- Has low or no impact.

As part of the evaluation process, a Standard Operating Procedure (SOP) (See Appendix C) for visual assessments was developed as a mechanism to promote consistency between decisions and provide the ability to document how decisions were made. Additionally it increases the comfort level for the staff in making visual impact decisions.

Generally the evaluation addresses impacts to public views, rather than private property. Assessments are done from locations where the public could view the project. This focus on public views is similar to the process used on Bainbridge Island, Washington mentioned above.

Visual Impact Assessments have been used in Maine since 2000 and have produced a range of decisions. In some cases proposed docks were allowed because they did not interfere with scenic values. In another situation, the proponent was asked to consider other locations after it was determined that the proposed dock would interfere with scenic views. That application was subsequently withdrawn and the proponents are working with neighbors to negotiate shared use of an existing dock. In a third case, the dock would have been the only one in a natural fjord

and would have been visible for hikers in a National Park. Consequently the project was denied.

After reviewing visual impacts for approximately five years, Maine's Department of Environmental Protection (the implementing agency) has found that for the most successful management of visual impacts, it needs to get involved with the first structure in a newly developing area. It is more difficult to use visual impact arguments when other docks already exist in the area. As noted above, the DEP successfully used its visual impact assessment techniques to deny permits for docks proposed in places where there was no previous development.

To date, no municipalities within the state have adopted similar programs at the local level, but the process could be adopted as part of an overlay zoning district evaluation process.

Case Study from Somes Sound, Maine—

Somes Sound is the only natural fjord on the east coast of the United States. It is used for recreational boating and is clearly visible from portions of Acadia National Park.

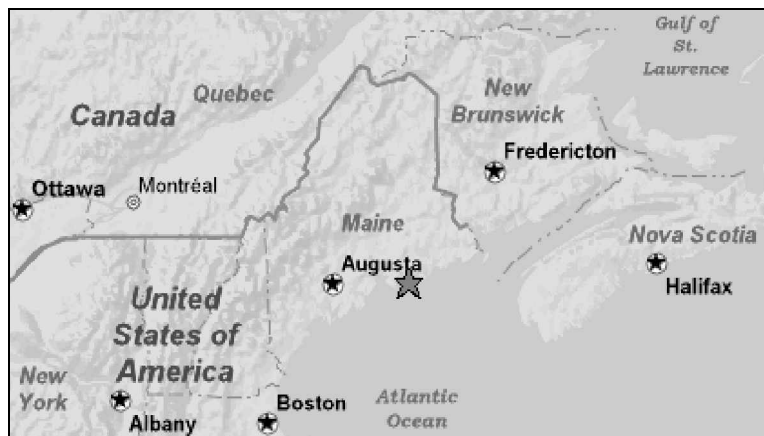


Figure 5. A locus map showing the location of Somes Sound in Maine (located at the star).

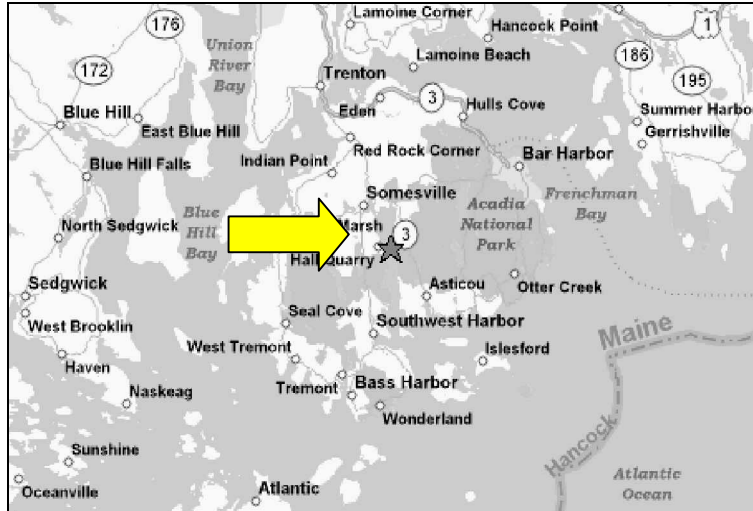


Figure 6. A locus map showing the location of Somes Sound in relation to Acadia National Park.

A resident on the shore of the Sound proposed to construct a dock so that friends could pick up passengers and launch dinghies and kayaks from his property. The applicant requested a 160-foot long wooden pier, six feet wide, with a 48-foot long by 4-foot wide aluminum ramp leading to a 48 foot by 14-foot wooden float. Initially the proposed pier was to be supported by three granite cribs located in tidal waters but, during the review process, the property owner offered to reduce the length of the pier to 100 feet and eliminate one granite support.

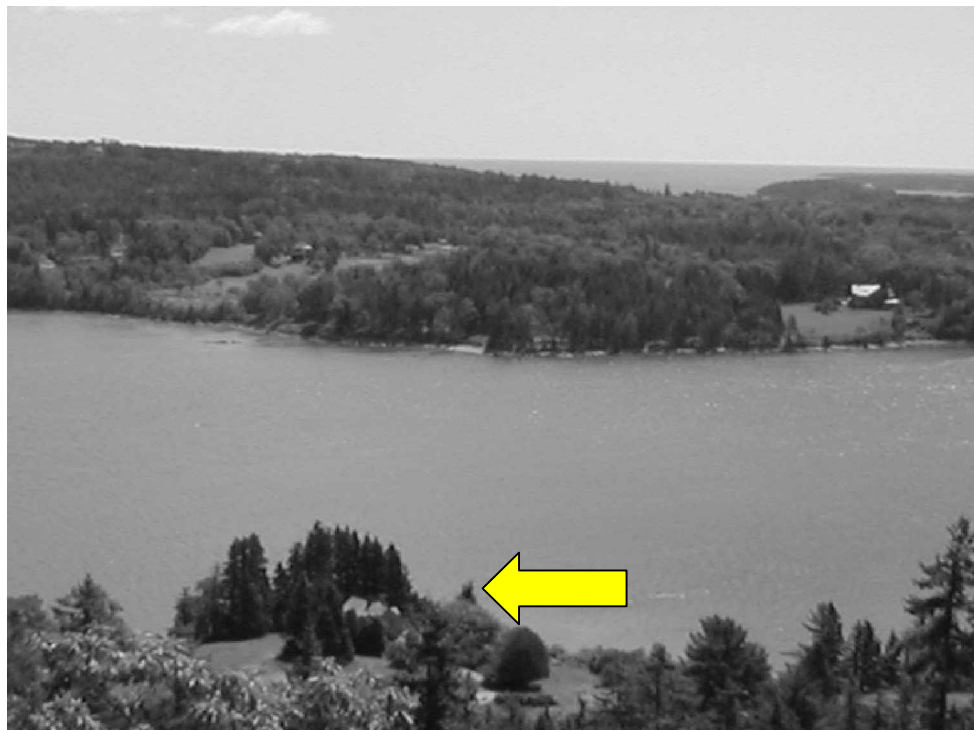


Figure 7. Approximate location of the proposed dock in Somes Sound, ME. Photo courtesy of the Maine Department of Environmental Protection. Used with permission

Within the State of Maine, such projects are under the jurisdiction of the Natural Resources Protection Act (38 M.R.S.A. §§ 480–A–Z). This Act allows the Maine Department of Environmental Protection (DEP) to review proposed projects for impacts to water quality, wetlands habitat, and scenic and aesthetic qualities, as well as impacts on existing uses such as navigation. This Act, its standards, and the review process are described earlier in this module (See pages 13–15).

Issues Raised—

The project was opposed by neighbors and the Town of Mount Desert. Issues raised during the review process included:

- The potential for increased erosion during construction and thereafter,
- The potential for adverse impacts on inter-tidal and sub-tidal wetland habitat,
- The potential for adverse impacts to navigation within the waterway, and
- The potential for adverse impacts to scenic and aesthetic qualities.

Result—

As a result of the review process the DEP found that the project would not cause unreasonable erosion.

The Coast Guard, the Army Corps of Engineers, and the Town Harbormaster testified that there would not be significant adverse impacts to navigation. The channel in this area is approximately 1,650 feet wide at low water. The proposed pier would intrude only 9.6% of the way across the channel in the original configuration and 6.6% in the reduced version. Additionally, there are 3–4 docks on the opposite side of the Sound from the proposed structure that apparently have not interfered with navigational use of the Sound.

However, 138 square feet of benthic habitat would be covered by the granite crib and 660 square feet of coastal wetland habitat would be permanently shaded by the dock. Because the proposed structure was for water-dependent purposes, it was considered under the provisions of the Natural Resources Protection Act which prohibit loss of wetland area, functions and values if there is a practicable, less environmentally damaging alternative to the project. The Department suggested several alternatives including the use of slip space and moorings at a nearby Town landing (where the applicant had been keeping his 53-foot sailing vessel). After its review, the DEP found that the applicant did not adequately demonstrate that the impacts of coastal wetland resources could not be avoided.

Particularly germane to this paper, the DEP also carefully reviewed the concerns regarding scenic and aesthetic impacts. Opponents contended that the proposed dock would unreasonably interfere with existing scenic uses by boaters on the Sound and from people using Acadia National Park. As part of the visual impact assessment for the project, the applicant submitted computerized images of how the proposed dock would look (see Figures 4a and 4b above).

In these graphics, a computerized image of the proposed dock after the applicant had reduced its length by 100 feet and eliminated one granite support, is superimposed on a photograph of the area. It uses the design and building materials identified by the applicant on plans submitted during the review process.

The applicant argued that the Sound is not a pristine undeveloped area, that there are other existing docks along its shores, and that the proposed project was “consistent with the scenic character of the area.” A consultant for the applicant stated that the proposed materials, colors, and form blend well with the existing shoreline. In the graphic images the dock is shown as green in color, based on the applicant’s contention that this is the color of the pressure treated wood to be used—wood that he felt would darken over time.

Opponents argued that the character of the fjord is very important, that there is an absence of existing docks on that portion of the shore, and that the structure would be highly visible to viewers of the area. The opponents contended that instead of darkening over time, the structure would weather to a silver gray color and become even more visible and out of character for the area.

The DEP noted that it had a responsibility to consider the impact of this structure both on its own and as part of the potential cumulative impacts on a relatively undeveloped shoreline. Again, the DEP considered whether there was a viable alternative and found that the applicant had failed to demonstrate that there was none.

Consequently the DEP denied the application based on impacts to wetland habitat and scenic and aesthetic impacts, noting that there were alternatives, such as the use of a near-by marina, available thereby rendering the proposal unnecessary and unreasonable according to the rules under the Natural Resource Protection Act.

The applicant appealed the decision to the State of Maine Superior Court arguing that the delegation of authority by the Legislature to the DEP is unconstitutional in that the Legislature did not provide sufficient guidance as to how the DEP should implement the provisions of the Act. The Act mandates that an “activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses” and that the “activity will not unreasonably harm any significant wildlife habitat...”. Therefore the applicant challenged that the Legislature had not adequately defined what was meant by “unreasonably interfere” and “unreasonably harm”.

After review, the Court found that “when one looks at the delegations in context ... with the entire statutory scheme and procedural safeguards, it is clear that the Legislature has provided reasonable guidance. ... In the present case, the Legislature’s purpose is clear from the preamble and context of the Act and review procedures are built into the statute and regulations.”

Further, the applicant argued that the DEP decision was not supported by substantial evidence and was thereby “arbitrary and capricious.” The Judge quoted from a prior case that, “An administrative decision will be sustained if, on the basis of the entire record before it, the agency could have fairly and reasonably found the facts as it did.” [Emphasis added.] The Judge further noted that “the court should not attempt to second-guess the agency on matters falling within its realm of expertise.” Consequently the court denied the applicant’s appeal, supporting the decision made by the DEP. (See State of Maine, Kennebec Superior Court Docket No. AP-03-19; Harold A. Kroeger v. State of Maine Department of Environmental Protection)

Lessons Learned—

- It is feasible for a state regulatory program to incorporate scenic and aesthetic concerns into the permit review process just as it does concerns regarding environment, navigation, or recreational use impacts.

- The State of Maine has established a process for incorporating visual impact assessments into regulatory review.
- The results of such visual impact assessments may, in some cases, be cause for denial of a proposed project.
- The courts have supported legislation that incorporates scenic and aesthetic values and visual impact assessments that are used in the regulatory review process.
- The court found that if an agency, acting within its regulatory authority and based on the entire record before it, could have fairly and reasonably found the facts as it did, then the judicial system will not override the agency's decision. As long as the agency's factual determinations are not "clearly erroneous", their decisions should be sustained by the courts.
- Given appropriately worded legislation, a clear review process, such as that developed by the State of Maine DEP, can form the basis for visual impact assessments and findings based on scenic and aesthetic values in the case of private docks and piers.

Case Study from Lloyd Harbor, New York—

Lloyd Harbor, in the Village of the same name, is a long, narrow, relatively shallow embayment connected to Huntington Bay on Long Island. The main portion of the water body ranges from 400–1,200 feet wide.



Figure 8. A locus map showing the location of Lloyd Harbor, NY (located at the star).

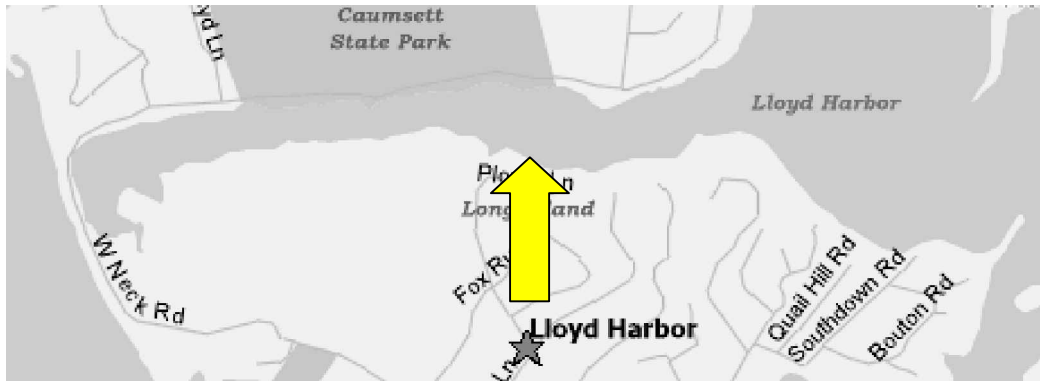


Figure 9. A locus map showing the location of the proposed dock in Lloyd Harbor (located at the arrow).

Lloyd Harbor has been designated by the State of New York as Significant Coastal Fish and Wildlife Habitat and as a Critical Environmental Area by the Village of Lloyd Harbor under provisions of New York State law.

As a result of this designation, the Village of Lloyd Harbor developed a Coastal Overlay District and zoning standards. The standards were designed to manage land and water uses in the harbor and to protect:

1. the significant natural resources of the area,
2. the relatively undeveloped open space and uses along and in the harbor, and
3. the scenic and visual qualities—essentially the community character of the waterfront.

The Overlay District recognizes the riparian rights of waterfront property owners to access and use the waters adjacent to their property. These riparian rights include the right to a dock subject to “reasonable regulations” in order to preserve “the public right of passage along the shore, public use of the harbor, natural resources, safety and aesthetic and scenic views.” [Emphasis added.]

Within the Overlay District, dock length is limited to 75' from mean high water, or to a depth no greater than two feet at the seaward end of the dock at mean low water, whichever produces the shortest dock. This reduces encroachments into the navigable portion of the Harbor and minimizes the effects of the physical presence and intrusion of docks on the visual quality and character of the area.

An owner of upland property abutting Lloyd Harbor proposed to construct a floating dock that would extend approximately 115' seaward of mean high water reaching a water depth of about four feet. The owner sought to berth a 36-foot long, 3.5-foot draft vessel at the dock. At the time of the proposal, the boat was moored in another location within the Harbor. The requested dock was intended to make it safer to load and unload passengers, particularly children or handicapped people; to provide better access to electricity and water; and to increase the safety of the boat during storm events. The village denied the request based on the zoning overlay district standards.

Issues Raised—

After being denied a permit by the Village to construct a dock longer than allowed by zoning, the upland property owner filed suit in US District Court against the Village of Lloyd Harbor. Their suit alleged that community's refusal to approve the application dampened "their legal and constitutional rights to own and use their property and its riparian rights" as granted under the Fifth Amendment of the US Constitution resulting in a "taking of their property for public use without just compensation." In making this claim, the plaintiffs asserted that the ordinances were "unconstitutional, illegal, and invalid" and did "not promote the health, safety, welfare or morals of the general public; [were] not enacted in furtherance of a comprehensive land use plan; are not rationally related to achieving a permissible municipal goal; and are arbitrary and capricious."

Witnesses for the defense testified that the overall intent of the Coastal Overlay District was to limit the length of docks and the depth of water they reach and, among other public interests, "to protect the aesthetic physical character of that portion of the area of the village."

The Court was asked to decide whether the Coastal Overlay District was constitutionally valid.

Result—

The case was tried in US District Court in the Eastern District of New York and is referred to as *Stuchin v. Town of Huntington and Village of Lloyd Harbor*.

In September of 1999, the judge handed down a 68-page decision (71 F. Supp 2d 76, No.CV 98-3580 (ADS)) finding that the property owners had not been denied their right to access the waterway adjacent to their property, but merely had their "mode of access...limited to a dinghy launched from the foreshore of their property." He went on to note that both the right of access and construction of a private dock are "subject to general rules and regulations as the Legislature may see proper to impose for the protection of the rights of the public, whatever these may be." The Coastal Overlay District was found to be legally valid and that the property owner's constitutional rights had not been violated, upholding the denial of the permit for the proposed dock.

In making this decision, the judge found there was a "substantial rational basis for reducing the size of docks in these waters including the Village's ... concerns regarding 1) obstruction to navigation, 2) preservation of the pristine natural habitat and precious resources of Lloyd Harbor and 3) aesthetics." [Emphasis added.] The judge dismissed the regulatory taking claim and concluded that the village standards, including those related to visual impacts and aesthetics "pass constitutional muster."

In making this decision the Court referred to *Montero v. Babbitt*, (US Eastern District Court NY 1995) upholding the government's authority to use police powers to restrict riparian owners' rights to access navigable waters. In the *Montero* case, the riparian right of access had not been denied entirely—the mode of access had merely been limited to a dinghy launched from the shore of the property in question.

Further, the Court concluded that the Village of Lloyd Harbor did not act in an "arbitrary or irrational manner" in establishing the Overlay District standards related to dock design, noting that "[g]enerally a municipal zoning ordinance is presumed to be valid and will not be held unconstitutional if its wisdom is at least fairly debatable and it bears a rational relationship to a

permissible state objective.” Citing *RRI Realty Corp v. Village of Southampton, NY* (2d Cir, 1989) “zoning regulations will survive substantive due process challenge unless they are ‘clearly arbitrary and unreasonable, having no substantial relation to the public health, safety, morals, or general welfare’.”

The Court also concluded that “aesthetics serve as another rational basis for the decision by the Village to limit dock length ... so as to limit human intrusion in this special natural and relatively undeveloped wildlife area in the midst of a suburban world.” This decision was based in part on testimony that, “In addressing aesthetics and ... in recognizing the character in the area, and the intent of the Village of Lloyd Harbor to maintain and protect that character, they developed the coastal overlay district.... [The Village] has enacted standards for the types of docks that are allowed in the village in order to address aesthetics, in order to maintain and protect the character of the village.”

Accordingly the Court found that the zoning ordinances bore a “rational relationship to a legitimate government objective.”

Lessons Learned—

- The Courts concluded that visual impacts, or aesthetics, are a valid basis for managing docks and piers.
- In the Lloyd Harbor instance, the management structure took the form of a zoning standard intended, in part, to maintain the relatively undeveloped character of the municipality’s waterfront.
- Aesthetic values are a valid part of the character of the community.
- The Court found that standards based on these concerns bear a “rational relationship to a legitimate government objective” and therefore are legally defensible.
- Regulatory standards intended to protect public health, welfare and safety, and the process in which they are developed, that are not arbitrary and capricious and that are based on an authority that “bears a rational relationship to a permissible state objective”, are defensible and have been upheld in court.

Summary from Case Studies—

There are valid, reproducible techniques for establishing visual standards for shoreline structures, including private docks. While property owners should expect access to adjacent waters as part of their riparian rights, this does not necessarily mean that a dock over public waters should be expected and, if permission is granted, it may come with conditions to mitigate visual impacts.

Research and experience have shown that visual impact assessment techniques are available for use by decision-makers. These include landscape planning for a specified area such as an embayment or a community, or a case-by-case review based on state-wide standards. Evaluation methods may include analysis of existing landscape views and visualizations of how the landscape would look with the proposed structure or structures in place.

As seen in the case studies, there have been legal decisions in which courts have upheld standards for private docks based on visual, aesthetic, or scenic impacts. States or municipalities therefore have the option of managing visual impacts from docks and piers through a variety of regulatory or non-regulatory methods similar to those used to manage environmental impacts.

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Appendix A: Maine Basic Visual Impact Assessment Form—

VISUAL ELEMENTS	VISUAL SUB ELEMENTS	INDICATORS/CLUES	ELEMENT RATINGS		ELEMENT SCORES
LANDSCAPE COMPATIBILITY ↓	COLOR	Significantly different color, hue, value chroma	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
	FORM	Incompatible 2/3 dimensional shape with landscape surroundings	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
	LINE	Incompatible edges, bands, or silhouette lines introduced	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
	TEXTURE	Incompatible textural grain, density, regularity or pattern	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
SUBTOTAL →					
SCALE CONTRAST ↓	Major scale introduction/intrusion		Severe	12	
	One of several major scales or major objects in confined setting		Moderate	8	
	Significant object or scale		Minimal	4	
	Small object or scale		None	0	
	SCORE				
SPATIAL DOMINANCE ↓	LANDSCAPE SITUATION	Object/activity dominates or is prominent in whole landscape composition; or is prominently situated within the landscape; or dominates landform, water, or sky backdrop	Dominate	12	
			Co-Dominate	8	
			Sub-ordinate	4	
			Insignificant	0	
	SCORE				
TOTAL VISUAL IMPACT SEVERITY	→				
		Severe	27-36		
		Strong	26-18		
		Moderate	17-9		
		Weak or Negligible	8-0		

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Appendix B. Definitions of Terms in Maine Visual Assessment Form—

Definitions associated with Maine Visual Impact Assessment Form

- A. Backdrop.** The distant part of a landscape located from 4 miles to infinity from the viewer.
- B. Color.** The property of reflecting light of a particular wavelength that enables the eye to differentiate otherwise indistinguishable objects. A hue (red, green, blue, yellow, etc.) as contrasted with a value (black, white, or gray).
- C. Contrast.** Diversity or distinction of adjacent parts. Effect of striking differences in color, form, line, or texture of a landscape.
- D. Dominance.** The extent to which an object is noticeable when compared to the surrounding context.
- E. Form.** The structure, mass or shape of a landscape or an object. Landscape form is often defined by the edges or outlines of landforms, rockforms, vegetation patterns, or waterforms, or the enclosed spaces created by these attributes.
- F. Landform.** One of the attributes or features that make up the Earth's surface, such as a plain, mountain, or valley.
- G. Landscape.** An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout that area.
- H. Landscape Character or Landscape Composition.** Particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique.
- I. Landscape Compatibility.** The elements of color, form, line, and texture that typically determine landscape character.
- J. Line.** Anything that is arranged in a row or sequence. In landscapes – ridges, skylines, structures, changes in vegetation, or individual trees and branches – may be perceived as line.
- K. Scale Contrast.** The degree to which an activity or object dominates or intrudes into a landscape or confined setting.
- L. Situation.** The position of the activity or object within the landscape.
- M. Spatial Dominance.** The degree to which an activity or object dominates the landscape; is prominently situated within the landscape; or dominates landform, waterform, or sky backdrop.
- N. Texture.** The grain of a landscape or repetitive pattern of tiny forms. Visual texture can range from smooth to coarse.
- O. Visual Elements.** The landscape's components that make up the overall visual character of a landscape.
- P. Waterform.** One of the attributes or features that make up the earth's surface, such as a pond, lake, stream, river, waterfall, estuary, or ocean.

Appendix C: Maine Visual Impact Assessment Matrix

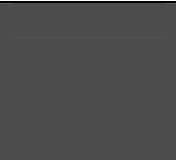
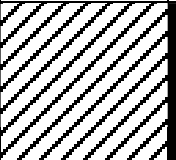
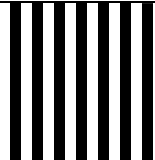
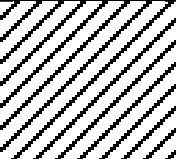
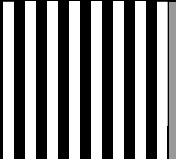

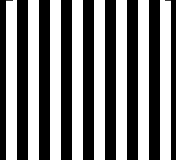



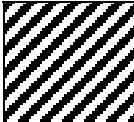
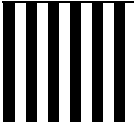
SCENIC SIGNIFICANCE OF VIEW	Impact severity Rating Scenic significance	Severe 36-27	Strong 26-18	Moderate 17-9	Weak/None 8-0
	High				
	Medium				
	Low				
	Unrated				


Chart is recommended method for reviewing visual impacts and determining level of effort required for mitigation and/or reconsideration of project siting and design. Application of the recommended actions should consider length of view and viewer expectation.


LEGEND

 **UNACCEPTABLE.** High level of visual contrast in line, form, color, or texture between existing high quality landscape and development proposal; view of water or other significant visual resource obstructed. May be grounds for project denial.

 **ACCEPTABLE WITH MAJOR MITIGATION.** High degree of contrast on landscape of medium significance; moderate degree of contrast on highly significant landscape. Project re-design necessary.

 **ACCEPTABLE WITH MITIGATION.** Some modification to project siting or design necessary to achieve better landscape 'fit.'

 **ACCEPTABLE WITH MINOR MITIGATION.** Relatively minor adjustments to plan or siting necessary to achieve a higher level of project compatibility.

 **LOW/NO IMPACT.** No perceptible change to the visual landscape. No mitigation required.

Appendix B
Basic Visual Assessment Form
DEPLW0451-A2002
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